DOCUMENT RESUME

ED 171 121 FL 010 276

AUTHOR Seliger, Herbert W.
TITLE Data Sources and the Study of L2 Speech Performance: Some Theoretical Issues.
PUB DATE [78]
NOTE 23p.

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS *Communicative Competence (Languages); Grammar; Intonation; *Language Processing; *Language Research; Linguistic Competence; *Linguistic Performance; *Linguistic Theory; Psycholinguistics; *Second Language Learning; Semantics; *Speech Communication; Suprasegmentals; *Verbal Communication

ABSTRACT

Speech performance data, including hesitations in the stream of speech, fragmented words or phrases, retracings, and the use of intonation contours for noncommunicative purposes, are examined. It is proposed that these types of speech phenomena are indicative of underlying hypothesis testing and utterance planning strategies. Data produced by 48 second language adult learners in spontaneous face-to-face speech situations were examined. A production model of speech shows the likely component parts of the utterance planning chain, the covert planning and acquisition strategies that may be associated with this component, and the overt language behavior correlates of these covert processes. At the initial stage of utterance planning the second language speaker must first select the focus for his own utterance. After the focus has been determined, the speaker begins to develop the semantic content, or the abstract psychological or conceptual base, of his utterance. Speech samples of the English as a second language learners are presented that illustrate these two stages of the speech process. (SW)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED171121

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
NATIONAL INSTITUTE OF EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY
Herbert W. Seliger
TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

Herbert W. Seliger

Queens College, C.U.N.Y.

Data Sources and the Study of L2 Speech Performance: Some Theoretical Issues

An important problem to consider in the study of language behavior in general and second language acquisition in particular concerns the theoretical framework or mental set of the researcher. This "Weltanschaung" in turn will be reflected in the kinds of phenomena which the researcher decides to examine from the universe of possibilities. Since "applied linguistics" or second language research is sometimes regarded by outsiders as either a non-field or a body of research in search of a theory, we in the field should consider this problem seriously. Almost every applied linguistics conference or forum has its requisite paper dealing with taxonomies of learner variables. Few include among these variables to be considered in studiying L2 acquistion, the important concern of the theoretical framework within which all of this research may be coalesced and interrelated.

FL010276

The study reported here is an initial attempt to look at data which much current theory claims is insignificant , trivial or uninteresting: hesitations in the stream of speech, fragmented words or phrases, retracings, the use of intonation contours for non-communicative purposes and so on. These and other so called breakdowns in the speech stream are often usually referred to as performance data. It is hoped that this study will demonstrate that this data, which has been largely ignored either because of current linguistic theory or simply because L2 researchers lack a theory of performance,

is relevant if we are to learn how L2 grammars function and are created.

The data for this study were produced by k adult L2 learners in spontaneous face-to-face speech situations and will be interpreted in terms of what such speech performance implies for the construction of an underlying model of utterance planning. Goldman-Eisler (1968) states that " the study of spontaeous speech is essential if the aim of the enquiry is to gain an understanding of the generative process involved in speech production." The view proposed in this article is that this statement ie doubly true with regard to the study of the unique aspects of the speech of developing bilinguals. However, before proceeding with an anàlysis of the data itself, there are important theoretical implications in considering this kind of data as revealing underlying grammatical abilities.

Current linguistic theories and to a large extent those guiding research im second language acquisition ignore important facets of language function that are of relevance to anyone concerned with second languages. For example while the typical linguistic model speaks of the input of lexicon, it never addresses itself to the problem of retrieval from the lexicon for a speaker who speaks more than one language. The typical linguistic description also never relates to the question of what happens when, in the act of generating syntactic rules for an utterance, the speaker/learner is faced with deciding among several competing options some of which may be derived from the grammar of another language. It also doesn't address the fact that the speaker/learner will become

aware of the misapplication of linguistic rules after an utterance has been planned and is in the act of being produced. Current models ignore the fact that adult speaker/learners of L2 will often have the conceptual framework for an utterance worked out but lack either the complete syntactic plan or the lexical items to express the abstract content and yet produce an utterance. All of these phenomena and many others are evidence of both planning and acquisition processes being carried out by the L2 learner.

While there is general agreement that linguistic theory has ignored the important area of languages in contact and most aspects of speech performance, our own field of second language acquistion has ignored the significant and rich source of data from speech performance because we have taken some linguistic pronouncements about what is important and what is not important too seriously. I am specifically referring tp the dichotomy established by theoretical linguists between performance and competence. One is bad and one is good. One is trivial and one is interesting. One is infinite and one is finite. The role of the linguist according to this view should be to describe the ideal speaker/listener. Linguistics should be concerned with a description of the capabilities of the speaker/listener and not with his momentary lapses caused by fatigue, a weak memory or the California smog.

This view assumes not only an ideal speaker/listener but also that the language being described is stable and not in flux. Interlanguages, however, are grammars in a state of flux. Researchers in L2 acquisition research have accepted this competence model too readily (perhaps because we wanted to legitimize our efforts within an already existing field) and have to some extent paid a price in terms of the interpretation of the data which we collect from speakers of different

languages and more important, in terms of the very data which we choose to look at.

If it is difficult to extend the performance competence distinction to the study of learners' grammars, what then should be the relevant data for the study of interlanguage grammars? It has been suggested by Corder (1967) and Selinker (1972) that the relevant data are the errors made by the learner. However, we are again faced with the problem of distinguishing error from lapse. It has been suggested in the literature that such a problem may be overcome by simply looking for errors which are repeated or pattermed, thatis, what appear to be "rule -governed errors" (even though all speech must be produced by some rule however transitory). This approach of course requires the collection of hugh amounts of data in order to be able to conclude that an error is a repeated one and not just a fluke of performance. Of course while the researcher is in the process of collecting data the interlanguage continues to change.

Accepting the performance competence distinction means that the researcher must not look at lapses , mistakes, hesitations or pauses but only at that language performance which can be claimed to be evidence for underlying competence ability. However, L2 researchers often do not practice what they preach. It is often not clear how a particular error was determined to be an output of a competence rule and not a lapse or mistake. As Dickerson (1975) has shown, there is the added problem with L2 grammars that different kinds of errors are produced for the same grammatical element under different performance conditions. (See Sankoff, 1978, for additional aspects of linguistic variability rules and L2 grammars.)

What Is the Relevant Data

If given all of the above, that the performance competence construct is methodologically and theoretically unsound for the study of L2 acquisition, what then is the relevant data, psychologically and linguistically for the study of the creation and function of second language grammars? A basic contrastive feature of a learner's grammar by definition is that it is transitory and that all output(with the exception of the ill-defined concept of fossilization)[1] is the result of transitory rules. Errors cannot easily be classed as either performance or competence but rather in terms of the relative stability of the particular rule responsible for the deviant utterance. Given this assumption and current inability to determine such relative stability, all output must be considered evidence for underlying rule governed behavior. All output would include slips of the tongue, self-correction (what is corrected, what is not corrected and how it is corrected), retracings as well as non-hesitant, non-fragmented utterances. Speech would include the former kind of data while writing would reveal only that data after it has been processed through the less stable more transitory rules. That is, writing performance would probably include only data which is clean of all the behaviors listed above.

L2 research should not be concerned with looking just at the end product but at the product in the act of production. This speech performance data, referred to by Seliger (1978) as "hesitation and speech correction behavior" includes language based behaviors which occur in the spontaneous speech of L2 learners but which does not usually contribute to the message in any way. In addition, such behaviors must be distinguished from normal discourse strategies which they may resemble in form. For example, a filled pause of the type uhh

may serve as a discourse device in order to hold the floor for the speaker. It may also serve,however, as a sentence planning device for the speaker. A rising intonation attached to an utterance may indicate the normal request for a yes or no response but it may also serve as ~~the~~ an indication that the speaker is testing a hypothesis about the grammatical form or content of his own sentence. While these behaviors are not always unambiguously interpretable, the context within which the behavior takes place can often clarify the function of the particular behavior.

Another interesting characteristic of such speech behaviors is that they are usually ignored by the listener who is focussed on the end result and on the content of the message. In some extreme cases, however, such as with excessive silent or filled pauses or stammering, the behavior so disturbs the continuity of the message that communication is interfered with and the listener's attention is drawn to the behavior itself. Usually, though, this speech behavior acts as a kind of noise overlay which takes place during the communication act but which while revealing the underlying processes of utterance planning and execution is not regarded by the listener as the end product and therefore not paid any attention. It may be for this reason that error analysis has focussed on the"cleaned up" data of second language performance.

An L2 Utterance Planning Model Based on Speech Performance

Given all of the above, what does the study of speech performance data suggest about ~~the~~ underlying linguistic processing? The remainder of this paper will be concerned with categorizing such data in terms of components of utterance planning which may be induced from the data. That is, we are concerned here with a production model of speech and will

attempt to infer both the parts of the model and the interrelationships of these parts to each other on the basis of the hesitation and speech correction behavior of the L2 speaker.

The proposed model (Figure I) shows the likely component parts of the utterance planning chain, what covert planning and acquisition strategies may be associated with this component and lastly what the overt language behavior correlates of these covert processes are.[2] An advantage in studying L2 learner utterance planning is the fact that much planning and acquisition behavior is externalized and thereby provides direct accessability to these processes.

The data for this study were collected from the spontaneous speech of L2 learners at the Queens College English Language Institute. The examples to be discussed were extracted from a corpus elicited in taped interviews with 48 adult ESL students from different language backgrounds and different levels of proficiency.

(FIGURE I ABOUT HERE)

This paper will discuss evidence for the existence of the first two components of the model and the processes associated with these components. Future research will be concerned with exploring the relationship among these stages and others postulated in the model. The purpose of the model proposed in FIGURE I is to provide a conceptual framework for future L2 research using speech behavior as the data base.

Topic Selection

Two things occur at the initial stage of utterance planning: 1) Assuming that we are discussing a normal face-to-face conversational situation, the potential speaker (in this case an L2 learner) must comprehend input that immediately precedes the onset of his own utterance. 2) The same speaker must then organize his own utterance

in response to the input supplied by the interlocutor. That is, the L2 speaker must first select the focus for his own utterance.

Among L2 learners, clarification or confirmation that the input has been received correctly before a response may be planned is shown by the speaker often repeating part of the interlocutor's utterance with rising intonation such as is normally associated with yes/no questions. (In all of the following examples, E refers to the native speaker interlocutor while S refers to the L2 learner.)[3]

1. E: How do you feel as a foreign student?
   S: Foreign student?
2. E: Did you feel good as a foreign student?
   S: My feel?
   E: Yes, how did you/
   S: Yes, very good because circumstances is very beautiful.

While the questions put to the subjects in the examples above are essentially the same, the response is different forthe two different speakers. The speaker in #1 seems to be unsure of the expression foreign student (or more likely the combination of the two words). On tape, the first word, foreign , is more strongly stressed indicating that the subject is not sure how to plan his response because he cannot process the input.

In #2, the speaker also uses a rising intonation indicating a problem with the input. In this case, the learner is uncertain about the word feel. Note however, that the subject's utterance was really a hypothesis being tested. The second response by E is cut off and S responds appropriately. Apparently, E's confirmation was sufficient because the paraphrased question was not completed. In other words,

S's rising intonation on my feel did not serve a discourse function. Rather, it functions as an overt clarification mechanism for the subject in order to understand the topic of his own utterance which he is already in the process of planning as can be seen by the fact that E is cut off and S responds. It must be concluded from these examples that at the topic selection stage of utterance planning, rising intonation is used to get a paraphrase from the interlocutor (a normal discourse use of intonation) or to get confirmation of a hypothesis already formed by the speaker about the input. These examples also illustrate the importance of considering the discourse environment beyond the actual utterance under examination. The fact that rising intonation is used here by speakers of quite diverse languages (Persian and Japanese) also would indicate that the use of intonation as a discourse or hypothesis testing device is probably a universal.

3. E: Tell me your full name.

S: My name...is Mieko.

Utterance #3 shows the use of rising intonation in the middle of a sentence. The intonation contour indicates the testing of a hypothesis about the input question. Perhaps the use of the adjective full with name confused the learner. Her hypothesis testing question focussed only on name and her answer indicates that she did not fully understand the question. The rising intonation is followed by a silent pause while the response to her hypothesis testing is processed and the remainder of the utterance is planned. Note as well that the utterance after the pause continues at the same pitch level where the rising intonation leaves off.[4]

Semantic Content Selection

Once the topic has been determined, the speaker then begins to develop the semantic outline of his utterance. In the sense used here, the semantic content refers to the abstract psychological or conceptual base of the utterance. Since meaning is also expressed through sentence structure, the conceptual base would also include at this point, the selection of at least the primitive outlines of the syntactic content of the sentence. It has been suggested elsewhere (Seliger, 1977) that avoidance strategy at the level of avoiding syntactic structures because of the meaning attached to their use takes place at the semantic level. That is, decisions determined by the meaning attached to the distributional rules for syntactic structures as well as decisions regarding semantic content would take place at this point in the utterance plan.

However, because of the nature of the utterance planning process, no decision made at any point in the process is irrevocable. It is obvious that once an utterance is vocalized, it cannot be erased but this does not prvent the speaker from examining his output and modifying it. The way in which these modifications take place in actual speech performance provides insights into the process by which utterances are fed and re-fed though the various components of the model.

It becomes evident through an analysis of the data that the relationship among the various components of the utterance planning model is not necessarily linear or entirely discrete. In fact, it would probably be only the rare perfectly planned and executed utterance that would follow the sequence proposed by the model linearly and without recycling. That is, while the order of components shown in the model is followed, an utterance may be recycled through ~~through~~

a speech plan component through which it has already been processed. Examples of this inter-component relationship would be the following utterances:

4. S: Very good uh sporting establishment and very big library and big ha:ll/rest-/cafeteria.
5. S: So our teaching way is li:ne/ line / continue/ no separate/ no isolating.

These utterances show the looping or recycling relationship between the semantic component and the lexicon. The learner has already selected the topic for the sentences, has sketched in the underlying conceptual base and the syntactic arrangement of the units of the utterance. However, in both cases, at the time of the actual utterance, the lexical selection had not yet been worked out. That is, the speaker has uttered the sentence before having determined all of its parts.

In #4, the learner had not yet settled on the word cafeteria but notice that the underlying semantic base had been decided on. Hall is produced with lengthened vowel. Given the entire utterance, one may infer that during this vowel lengthening, some kind of lexical search is being conducted in an attempt to retrieve a word which combines the features of"large room" (ergo: ha:ll) and"eating place" (ergo: the truncated form of restaurant). The speaker retrieves the word restaurant but an editing mechanism prevents the word from being completely uttered. This editing mechanism, which recognizes a feature contrast between the word restaurant and the item which better expresses the underlying meaning sought causes a looping back to the lexicon. The learner settles on the word cafeteria as satisfying the features

which he is seeking to express. This is indicated both by the intonation contour and by the fact that the search is discontinued.

The second example demonstrates how the learner may utilize a number of hypothesis testing and search strategies and still not arrive at a solution in the second language. Example #5 above also illustrates well the creative construction process which allows the L2 speaker to express meaning in terms of the semantic characteristics of the concept he wishes to produce even though he lacks the specific lexeme for that set of features. This example also illustrates the recursive nature of the looping process described above. The utterance has been planned with a lexical gap. Again, once all stages have been completed, the learner produces the utterance and loops back to the lexicon in an attempt to match the semantic features with an appropriate lexical item.

In this case, it appears that the word being sought, a term for the concept "integrated," does not exist in this speaker's repertoire. Note, however, the gradual refinement of the concept "integrated." The processes employed by this speaker include both planning and hypothesis testing. The first segment in this search series in #5, the word line, is produced with a lengthened vowel. This has been interpreted elsewhere as both a planning strategy similar to silent and filled pauses and a hypothesis testing strategy. It may be assumed that during the lengthened vowel, a search is going on to determine if the word uttered is appropriate or not. The word with the lengthened vowel is then repeated, only this time with rising intonation indicating overt hypothesis testing. The speaker then produces another word which shares the semantic field with line. The word continue is also uttered with rising intonation and is followed with two more words produced with initial rising and then falling intonation

indicating two possible paraphrases acceptable to the speaker. The speech data, in other words, demonstrate overt hypothesis testing and confirmation as indicated by the intonation contours and corrections of the speaker.

These examples show another characteristic of second language learner speech behavior. There is no external intervention. The interlocutor does not correct the speaker or supply the appropriate term. The speaker acts here as his own feedback mechanism. That is, these examples show the speaker talking to himself about his own output.

Summary and Conclusions

This paper has taken the position that valuable insights into the acquisition and planning strategies of adult L2 learners may be gained through the study of previously ingored performance data. The position taken is that speech phenomena such as false starts, self-corrections, use of question intonations and pauses all are indicative of underlying hypothesis testing and utterance planning strategies.

Based on initial evidence, a five stage model has been proposed. Data has been discussed with regard to two of the stages of the model and how covert planning and acquistion strategies may be inferred from overt performance. Future research will examine additional data with regard to other stages in the model.

In addition to providing direct evidence for such basic language acquisition strategies as hypothesis testing and confirmation, analysis of L2 speech behavior shows that speakers utilize a recursive process

by which parts of utterances are recycled through various components of the utterance planning system in an attempt to make the utterance better understood to the interlocutor and apparently to make it more acceptable to the L2 speaker in terms of whatever idealized conception he may have of the utterance in his underlying representation of it.

The study of L2 utterance planning through performance data raises some interesting theoretical and empirical questions. What causes the L2 learner to reject some of his own hypotheses and accept others which may also be inappropriate in terms of the L2 grammar? What form does feedback take for the formation and rejection or confirmation of utterance hypotheses which lead to increments in the development of the L2 grammar? It has been shown above that the learner can function as his own feedback device but what roles are played by the learner's own grammar and how much is dependent on external feedback such as gestural or verbal response from the interlocutor?

Linguistically mature native speakers reject their own utterances as evidenced by what has been called repair or retracing. This behavior is said to be determined by the internal state of the speaker's grammar. Retracing and correction in the speech of native speakers is said to be motivated by a striving for the ideal utterance in terms of the underlying grammatical competence (Clark and Clark, 1977). This is apparently not true of learners in the process of acquiring a second language since they are able to make only limited decisions about the acceptability of their own utterances and are therefore dependent on outside mechanisms. At what stage does internal quality control take precedence over these external mechanisms?

These and other questi9ns should lead to the study of L2 learner performance as a source of information about how learners develop and use a second language grammar. Contrary to the view expressed by Miller (1966) and cited by Corder (1967) that "it would be meaningless to state rules for making mistakes," the view expressed here is that L2 mistakes in the form of speech performance behavior are an important source for understanding L2 acquisition.

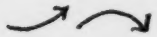
Footnotes

1. An interesting paradox not addressed in the literature is the confusion between a fossilization (Selinker, 1972) and an error. If a fossilization is a stabalized error which is impervious to correction, how is it different from Corder's concept of systematic error when observed in a corpus? Since learners may often ignore disconfirming evidence for their hypotheses, all errors cannot simply be regarded as hypotheses being tested. That is, when may we assume that an error is the result of hypothesis testing and when is it simply a falsely confirmed hypothesis, i.e. a rule no longer in the realm of a hypothesis being tested but perhaps a fossilization?

2. Most of our evidence for hypothesis testing has been of an inferential nature. The usual argument for hypothesis testing is that when the learner produces an error, that error should be regarded as a hypothesis being tested. This leads to the view that all deviant utterances are unconfirmed hypotheses in the act of being confirmed or rejected. (See footnote 1 above for the problem of disting uishing between errors and fossilizations.) What is needed is more direct proof that this process is really taking place rather than rely on an output which may or may not be the result of this process. It is proposed that speech performance of the type discussed in this paper is just such direct evidence.

footnotes continued

3. Notation conventions followed:

 arrows indicated intonation contour

/ means utterance interrupted at this po nt

: lengthened segment

... indicates silent pause

4. Silent pauses which do not occur at normal phrase junctures are normally regarded by researchers as planning junctures. (Boomer, 1965; Clark and Clark, 1977)

Bibliography

Boomer, D.S."Hesitation and Grammatical Encoding." Language and Speech, 8 (1965).

Clark, Herbert H. and Clark, Eve V. Psychology and Language. New York: Harcourt,Brace, Jovanovich, 1977.

Corder, S.P. "The Significance of Learners' Errors." International Review of Applied Linguistics,V/4 (1967).

Dickerson, Lorna J. "The Learner's Interlanguage as a System of Variable Rules." TESOL Quarterly, Vol. 9, No. 4 , Dec. 1975.

Goldman-Eisler, Frieda. Psycholinguistics: Experiments in Spontaneous Speech. New York: Academic Press, 1968.

Miller,George A. "Language and Psychology." in E.H. Lenneberg, editor. New Directions in the Study of Language. Boston: MIT Press, 1966.

Sankoff, David. Linguistic Variation: Models and Methods. New York: Academic Press, 1978.

Seliger, Herbert W."Hesitation and Speech Correction Behavior in L2 Learners." Paper presented at International TESOL Convention, Mexico City, 1978.

Seliger, Herbert W. "Semantic Presuppositions Underlying Avoidance Strategies." CUNY Forum in Linguistics, Vol 3, Fall 1977.

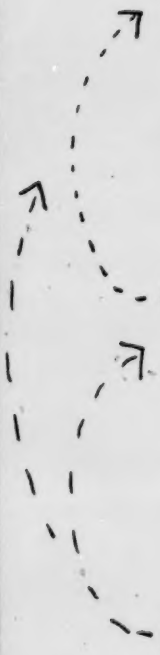
Selinker, Larry. "Interlanguage." International Review of Applied Linguistics, X/3, 1972.

Herbert W. Seliger
Queens College, C.U.N.Y.
October 1978

p. 1 FIGURE I

FIGURE I

UTTERANCE PLANNING MODEL FOR L2 LEARNERS



SPEECH PLAN COMPONENT	COVERT PROCESS OR FUNCTION	OVERT SPEECH BEHAVIOR
Topic Selection	Comprehension of input; selection of general topic of utterance. Overt behavior indicates lack of comprehension or need to confirm hypothesis about input.	a. Y/N question contour focussed on some element of input supplied by interlocutor, i.e. L repeats some part of input with rising intonation b. Silent or filled pauses.
Semantic Content Selection	Determination of general ideational content at abstract level; triggers initial syntactic arrangements and lexical search. Overt behavior indicates semantic decisions made but lexical component incomplete; interference may result from overlapping of semantic fields from L1 and L2; avoidance may result from sudden recognition of feature difference	a. silent pause before word or phrase b. rising intonation on a single word. c. avoidance shown by fragmented word and correction by a different word with a similar meaning. c. segment (vowel or consonant) lengthening followed by correction. d. retracing or continuation of utteran at faster speed.
(Initial)Syntactic Plan	Arrangement of semantic units, insertion of automatic or formulaic lexical units. Avoidance indicated by overt behaviors a.,b., or c. Interference may result from grammatically correct utterance which is semantically anomolous when examined within discourse context.	a. silent or filled pause followed by rephrased utterance without lexical or semantic change. b. segment lengthening followed by change in syntax but not in content. c. retracing and change of syntax.
Lexical Selection		

Utterance Planning Model continued

SPEECH PLAN COMPONENT	COVERT PROCESS OR FUNCTION	OVERT SPEECH BEHAVIOR
Lexical Selection	Determination of specific lexical items according to semantic content and syntactic function. Overt behavior indicates retrieval problems or search for appropriate item; interference in form of L1 lexeme indicates level of accessibility of L1 lexicon compared to L2; interference may also be triggered by surface phonetic similarities (see below). Correction followed by synonym may indicate sociolinguistic motivation for overt behavior. Abnormal intonation indicates hypothesis testing and confirmation.	a. silent or filled pause before lexeme. b. insertion of L1 lexeme in L2 utterance. c. segment lengthening followed by retracing or correction of word, or simply utterance of word. d. correction followed by a synonym. e. rising intonation contour on words followed by word selection with falling intonation. (Same phenomenon shown by level intonation f. retracing or repetition.
Phonetic Realization	Articulatory plan. Pauses indicate problem in carrying out articulatory plan. Interference may be caused by both superficial phonetic similarity and combination of phonetic, semantic and lexical similarities.	a. silent or filled pause before troublesome word or sound. b. correction shown by fragmented L1 word followed by similar sounding L2 word.

FIGURE 1